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passive attitude toward an annoying matter, over which she had no control, and that is what we all have to learn to do with matters that are really beyond our control. We may, eventually, be able to correct the difficulty, but in the meantime, for our own sake, let us be passive.

THE SIGNIFICANCE AND MANAGEMENT OF CONVULSIONS

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Introduction. Of all the symptoms in nervous and mental diseases, none is so important as convulsions from the point of view of the observation of a nurse. It is rather striking that the physician is seldom fortunate enough to witness the entire process of a convulsive attack and he must, therefore, depend wholly upon the intelligent coöperation of the nurse. It cannot be too strongly emphasized that convulsions play important rôles in the diagnosis of a nervous or mental infirmity. Hence it is of supreme importance for the nurse to appreciate the significance of convulsions and learn properly how to observe and record them. It is, however, well to bear in mind that patients afflicted with convulsions are not always epileptic, for convulsions may become manifest in a variety of diseases and conditions. It is the purpose of this paper to give a comprehensive account of convulsions.

General considerations. Synonyms.—Convulsions are often called fits, spasms, seizures, and convulsive seizures.

Definition. Convulsion is derived from a Latin word—*convello*, *con* (*cum*) with, and *vello* pull, meaning a pulling together or contraction. *A convulsion may be defined as an involuntary muscular contraction.* It has two stages, tonic and clonic, the former meaning rigidity with formation of fixed positions and the latter implying rhythmic convulsive contraction. In some cases the convulsion may be tonic. The tonic stage lasts a few seconds; and the clonic several minutes; however, the time duration may be longer in each instance.

Convulsions may be general or partial, the former being extended all over the body and the latter limited to a certain part of the body, such as the face, arm or leg. In such cases the convulsion is designated, as Jacksonian, named after the renowned English neurologist, Hughlings Jackson, who was the first one to make this valuable observation.

Convulsions may be preceded by a definite prodromal period which may be of short or long duration, this period is known as *aura* which is very

frequently present particularly in the epileptics. The aura may become manifest in the following ways: (1) Motor sphere—isolated clonic or tonic twitchings of face, thumb, etc., may be experienced. (2) Sensory sphere—sudden attacks of pain; headache, giddiness, vertigo, and air hunger; experiencing peculiar sensations in various parts of the body, especially in the epigastrium; seeing dark spots before the eyes and the perception of peculiar odors and tastes. (3) Mental sphere—periods of mild depression and a feeling of uncertainty or unreality; hallucinations of all senses, anxiety and apprehensive states; impulsive and erratic acts; irritability and irascibility; tendency to confusion and perplexity;—these are frequent symptoms of an approaching attack. (4) Vaso-motor sphere—cardiac palpitation, perspiration, blushing of face, and the like are often noted.

The *onset* of the convulsion is abrupt and is usually preceded by a sudden and loud shrill cry and the patient falls on the floor.

Phenomena during the convulsion. Consciousness is usually suspended, although in some cases the patient may be conscious during the entire attack. The patient bites his tongue, froth comes out from his mouth, and his face is congested. The pupils are dilated and breathing is labored and accelerated, often stertorous. There is involuntary voidance of urine. The temperature may be elevated. The tonic stage is soon succeeded by the clonic. In the words of Prof. Sir William R. Gowers,

The whole frame (referring to a convulsion) is fixed by “tonic” spasm in some strange posture, unlike that which is ever seen in normal states. The chest becomes rigid and the respiratory movements are arrested; the face becomes congested and livid. When life seems almost at an end, the muscular spasm presents remissions so as to become “clonic.” The remissions are at first slight and frequent, but gradually become deeper and less frequent, so as to assume the character of jerks and the relaxation between them becomes greater until they amount to sudden shocklike contractions. These effect some renewal of air in the lungs and relieve the state of asphyxia. Frothy saliva, often blood-stained, is extruded from the lips, and when the last jerk has occurred the sufferer is left prostrate and unconscious.

Following the convulsion, the patient passes into a stuporous state; during which period he is confused and in some instances he may become excited, violent, and even manifest assaullive tendencies or, again, he may pass into a deep sleep which may vary from a few minutes to several hours. As a rule he is confused as to what has transpired during the attack.

Occurrence of convulsions. Aside from epilepsy, convulsions may also appear in other nervous and mental diseases, the nature and character

of which is not always characteristic and significant. The Jacksonian type is usually indicative of a definite disease process in a certain part of the brain. However, the display of the convulsive seizure *per se* does not, as a rule, bear striking diagnostic features. It is the mode of onset, course, and termination of the attack that aid the physician in diagnosing the malady. Convulsions may occur in the following diseases and states:

I. *In genuine epilepsy.*

II. *In organic brain disease*, such as in general paralysis or, as it is frequently known, paresis, or softening of the brain; arteriosclerotic brain disease; tumor and abscess of the brain; cerebral syphilis; in various forms of meningitis; multiple sclerosis; hydrocephalus; fracture of the skull; idiocy.

III. *In toxic states*: chronic alcoholic intoxication; puerperal sepsis; uraemia; strychnine intoxication; lead poisoning; tetany and other toxic conditions.

IV. *In functional nervous and mental diseases*: dementia praecox and hysteria.

V. *In infants and children convulsions are of common occurrence*; this is due to the fact that their nervous system lacks stability. Particularly they occur during dentition, rickets and other nutritional and gastrointestinal disturbances.

How to observe convulsions. A nurse's note to the effect that a patient had a "convulsion" has no relative significance and offers no assistance to the physician. From the description above one can readily see that convulsive phenomena vary and present rather a complicated series of events, all of which should be carefully recorded in order to render such observation valuable. The following points should be noted:

a. The patient's general condition prior to the attack. Did he complain of any pain? Was he dizzy or did he see black spots before his eyes? What was his mood? What was his general demeanour? Did he complain of cardiac palpitation? In other words a complete observation of the patient's general attitude and reactions.

b. How did the convulsion develop? Was it sudden or gradual? Did the patient bite his tongue and did he froth from mouth?

c. Did the development of the convulsion have any relation to a mental shock? Was there a history of fright? injury? etc.?

d. Was the convulsion clonic or tonic or both? State time duration of each stage.

e. The position of the head, limbs, etc.

f. Was the convulsion general or limited to one part of the body? Describe it in detail.

g. Was the patient conscious or unconscious during the attack?

- h.* Was the patient incontinent?
- i.* If patient uttered spontaneous remarks, record them in the patient's own words.
- j.* The condition of the pupils, dilated or contracted?
- k.* Pulse, temperature, respiration, should be noted.
- l.* Condition of the skin.
- m.* Injuries.
- n.* Weakness of limbs.
- o.* How did the convulsion terminate? Did it pass into stupor, sleep, or excitement?

The management of a convulsion. Should the nurse detect the approach of a convulsion, she should take all the proper precautions to prevent the patient from falling. It is advisable to put the patient to bed, remove artificial teeth, loosen his clothing and keep constant watch of him. When the patient falls in a convulsion, let him lie, provided his position is comfortable. It is essentially important to loosen his clothing, particularly around the waist and neck, remove artificial teeth and place a pillow under his head. In order to prevent the biting of the tongue, a mouth gag in the form of a cork or folded towel should be placed between his teeth, but he must be carefully watched in fear that he might swallow it. Use every possible means of preventing self-injury, in such cases some restraint is advisable. *No medication should be employed.* Should the patient, following the convulsion, become violent and excited, medication or physical restraint are necessary in order to avoid bodily injuries as well as homicidal attacks.

OUR WATER SUPPLY

By KATHARINE COOKE, *Plattsburgh, N. Y.*

Perhaps there are many who realize but little how much they depend upon the water supply of our country. This fact is not brought home to them until in some way they are deprived of it, and then, even if this happens for only a short time, they fully realize the inconvenience caused by its absence, as well as its absolute necessity to life.

It is our aim, of course, to have the water as pure as possible and to obtain it from such a source that it may be in the very best condition. There are six natural sources from which we may get our supply of water, and each is characteristic of itself, namely, river, lake, spring, well, sea, and rain water.

River water usually originates in pure springs, but owing to the cities built along its course, it soon becomes polluted. Lake water may be